



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/933,838	08/22/2001	Guiping Zhang	JH 103	7282
7590 04/14/2004				
Rosenberg, Klein & Lee 3458 Ellicott Center Drive Suite 101 Ellicott City, MD 21043		EXAMINER TSANG FOSTER, SUSY N		
		ART UNIT		PAPER NUMBER
		1745		

DATE MAILED: 04/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/933,838

Applicant(s)

ZHANG ET AL.

Examiner

Susy N Tsang-Foster

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 8/22/2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 20011012.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of the species with 3 components directed to PVDF (polyvinylidene fluoride), MPE (modified polyethylene), and MPAC (modified polyacrylic acid) obtained from a copolymer of carboxylic acid and acrylonitrile and butadiene and the species of micro-porous polypropylene film as the separation membrane in Paper No. 20040115 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

It is noted that applicant amended claim 1, 2, and 4 such that pending claims 1-7 are readable on the elected species.

Information Disclosure Statement

2. The information disclosure statement filed on 10/12/2001 has been considered by the Examiner.

Specification

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The abstract of the disclosure is objected to because it contains legal phraseology.

Furthermore, it is unclear how the positive electrode sheet and the negative electrode sheet are formed by blending a binder with positive electrode powder and coating the resulting blend on a copper foil or an aluminum foil used as the collector as recited in the first two lines of the abstract since the negative electrode cannot be formed by blending a positive electrode powder. In addition, the phrase "a alternative" should be "an alternative". It is also unclear what the positive and negative collectors are welded to.

Correction is required. See MPEP § 608.01(b).

5. The disclosure is objected to because of the following informalities:

On page 2, line 13, "in stead" should be "instead".

On page 6, line 1, "a alternative" should be "an alternative".

Appropriate correction is required.

6. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: In claim 1, the limitation "0.1 wt% ~ 90wt% of a modified polyacrylates" is not in the specification. Instead, page 4 of the specification states "1wt%~ 90wt% of a modified polyacrylates".

Claim Interpretation

7. For the purposes of prosecution the symbol “~” in the claims is interpreted by the Examiner to mean “-” or “to” in the light of the specification since the conventional definition of this symbol in mathematics is “is similar to” to indicate that two objects are geometrically similar which does not apply to numerical ranges.

Claim Objections

8. Claim 3 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. In claim 3 does not further limit claim 2 because claim 2 is drawn to a separator that is a microporous polypropylene film whereas claim 3 is drawn to a different separator that is produced from polymethyl methacrylate and polyvinylidene fluoride.

9. Claim 1 is objected to because of the following informalities: In claim 1, the limitation “a alternative” should be “an alternative”. Appropriate correction is required.

Claim Rejections - 35 USC § 112

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 1745

In claim 1, the limitation “wherein said positive and negative electrode sheets a and b are formed by blending a binder with positive electrode powder and coating the resulting blend on a copper foil or an aluminum foil used as the collector” is indefinite because it is unclear how the negative electrode sheet can be formed by blending a binder with a positive electrode powder.

In claim 1, it is unclear what the percentages are based on in components (a)-(c). For example, are the percentages based on the total weight of the binder, the electrode, the battery, etc.?

In claim 1, the limitation “a modified polyethylene” is indefinite because neither the claims nor the specification define the term “modified polyethylene” and one of ordinary skill in the art would not understand what is being claimed by applicant as a modified polyethylene.

In claim 1, the limitation “a modified polyacrylate” is indefinite because the term is neither clearly defined in the claims nor in the specification and one of ordinary skill in the art would not understand what is being claimed by applicant as a modified polyacrylate. See further reasons below in claim 4.

In claim 1, the limitation “said positive and negative collectors are welded, respectively” is indefinite because it is unclear to what the positive and negative collectors are welded respectively.

In claim 4, the limitation “said modified polyacrylates is a substance made by copolymerizing more than 60 wt% of a carboxylic acid or carboxylic acid ester as the major constituent consisting of acrylonitrile and 0 – 40% of a second constituent being butadiene into a copolymer, and subsequently neutralizing part or all of the carboxylic groups on said copolymer”

Art Unit: 1745

is indefinite because it is unclear what the weight% the constituents are based on and what the starting monomers are for the modified polyacrylates. In this limitation, in the event that the amount of butadiene is 0 wt%, then the modified polyacrylate would be only a carboxylic acid or carboxylic acid ester consisting of acrylonitrile and it is unclear to the Examiner how this would be a copolymer when the amount of butadiene is 0 wt%. Therefore, it is unclear how the butadiene can be 0 wt% in a copolymer because by definition a copolymer is a polymer of 2 different monomers. Furthermore, it is unclear what a carboxylic acid or carboxylic acid ester consisting of acrylonitrile is and what chemical structure this constituent would have. It is also unclear to the Examiner how a polyacrylate would be formed from an acrylonitrile containing monomer since conventionally a polyacrylate is formed from an acrylate monomer. Finally, it is unclear how the carboxylic groups on the copolymer are neutralized.

In claim 5, the limitation, "a composite oxide of lithium and transitions metals, ...LiNi_xCo_{1-x}O₂ and the like" is indefinite because it is unclear what "and the like" encompasses.

Regarding claim 5, the phrase "or the like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

In claim 5, the limitation "natural graphite and modified products thereof" is indefinite because it is unclear what modified products of natural graphite are intended to be claimed by applicant.

Art Unit: 1745

In claim 5, the limitation "petroleum coke and modified products thereof" is indefinite because it is unclear what modified products of petroleum coke are intended to be claimed by applicant.

Claim 6 recites the limitation "said electrolyte" in line 1. There is insufficient antecedent basis for this limitation in the claim.

In claim 6, it is unclear what the co-polymer is.

Regarding claim 6, the phrase "or the like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Claims depending from claims rejected under 35 USC 112, second paragraph are also rejected for the same.

Conclusion

12. Any inquiry concerning this communication or earlier communications should be directed to examiner Susy Tsang-Foster, Ph.D. whose telephone number is (571) 272-1293. The examiner can normally be reached on Monday through Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at (571) 272-1292.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Art Unit: 1745

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

st/



Susy Tsang-Foster
Primary Examiner
Art Unit 1745